

## CLAIMS

1. A stringed instrument, comprising:

- 5       (a) an elongated body,
- (b) a fingerboard bounded by a nut and a bridge, said fingerboard further having a longitudinal axis,
- (c) one or more strings suspended over said fingerboard between said nut and said bridge,
- (d) a first means for supporting said body on or close to said axis close to or beyond said nut  
10              at the chest of a person playing said instrument, and
- (e) a second means for supporting said body on or close to said axis close to or beyond said bridge,

whereby said first and said second means support said fingerboard close to or beyond its two ends, defined by said nut and said bridge, thus ensuring stability of said instrument for left hand

- 15              operations on said fingerboard and eliminating the need to secure said instrument with the left hand of said person, and

whereby said first and said second means improve rotational stability of said instrument against disturbances of bow operations.

- 20     1.1. The stringed instrument of claim 1 wherein said second means supports said body close to said bridge,

whereby said second means reduces the effective weight of said instrument pushing against said person's chest, thus improving playing posture and technique.

- 25     1.2. The stringed instrument of claim 1 wherein said first means supports said body at the sternum of said person,

whereby said first means allows positioning of said fingerboard on the anatomical median plane of said person, thus improving playing posture and technique.

2. A seat-based instrument-support unit, comprising:

- (a) a support member, a first part of said support member having a first means for interfacing with a seat, said seat bearing said support member, such that said first part of said support member is stationary relative to said seat,
- 5 (b) an instrument having an elongated body, said body having a longitudinal axis,
- (c) a second means for interfacing said support member with said instrument, and
- (d) a third means for restricting rotation of said instrument around said longitudinal axis, whereby the orientation of said support member, and thus of said instrument, is a function of the orientation of said seat.

10

2.1. The seat-based instrument-support unit of claim 2 further having a fourth means for rotating said instrument around a second axis, said second axis being perpendicular to the anatomical median plane of a person sitting on said seat and playing said instrument,

15 whereby said instrument can be rotated around said second axis for adjustment relative to the body of said person.

2.1.1. The seat-based instrument-support unit of claim 2.1 wherein said fourth means is a living-hinge design, and wherein said second means is a tongue-and-groove design,

20 whereby the combination of both said living-hinge design and said tongue-and-groove design enables a secure interface between said support member and said instrument during operation, and whereby said living-hinge design simplifies construction of said unit, thus economizing production, and

whereby said tongue-and-groove design simplifies construction of said unit, thus economizing production, and

25 whereby said tongue-and-groove design simplifies both assembly and disassembly of said unit.

2.1.2. The seat-based instrument-support unit of claim 2.1 wherein both said fourth means and said second means combined are a magnetic-hinge design,

whereby said magnetic hinge joint eliminates the need for mechanical means of maintaining said interface, thus simplifying construction and reducing production cost, and

5 whereby the process of joining said body and said support member is assisted magnetically, and thus simplified, and

whereby the process of separating said body and said support member is simplified.

2.2. The seat-based instrument-support unit of claim 2 further having a fourth means for rotating  
10 said instrument around a second axis, said second axis being on or close to the anatomical horizontal plane of a person sitting on said seat and playing said instrument, and on or close to the anatomical median plane of said person,

whereby said instrument can rotate around said second axis congruently with the swaying torso of said person, thus improving playing posture and technique.

15

2.2.1. The seat-based instrument-support unit of claim 2.2 further having a fifth means for spring-like reversion of said instrument to its original position after its rotation around said second axis,

whereby said fourth means and said fifth means emulate the swaying torso motion of said person, thus further improving playing technique.

20

2.2.1.1. The seat-based instrument-support unit of claim 2.2 wherein said fifth means is a torsion-bar design,

whereby said torsion-bar design simplifies construction of said unit, thus economizing production.

25

3. A support for an instrument, comprising:

(a) a support member, a first part of said support member having a first means for interfacing with a base, said base bearing said support member, such that said first part of said

support member is stationary relative to said base, a second part of said support member having a second means for interfacing with said instrument,

(b) a primary means for rotating said instrument around a primary axis, said primary axis stationary relative to said first part of said support member, and

5 (c) a secondary means for rotating said instrument around a secondary axis, said secondary axis being both perpendicular to said primary axis and stationary relative to said instrument, such that both said secondary axis and said instrument rotate around said primary axis via said primary means,

whereby said secondary means enables adjustment of said instrument, when interfacing with

10 said support member at said second part by said second means, relative to the torso of a musician, and

whereby said primary means enables said instrument, when interfacing with said support at said second part by said second means, to move congruently with the torso motion of said musician, said torso motion defined as swaying within the anatomical coronal plane of said musician; said 15 support is positioned on the anatomical median plane of said musician and perpendicular to the anatomical coronal plane of said musician; and said support is further positioned on or near the anatomical horizontal plane of said musician and aligned with the axis of said torso motion, and

whereby said support prevents rotation of said instrument around the longitudinal axis of said instrument.

20

4. A musical instrument system, comprising:

(a) a body,

(b) a support,

25 (c) a first means for interfacing said body with the chest of a person,

(d) a second means for interfacing said body with said support,

(e) a third means for interfacing said support with a base, said base bearing said support such that a first part of said support is stationary relative to said base, and

(f) a fourth means for enabling a position change of said body, such that said body can move congruently with the moving torso of said person, while said body interfaces with both said support and said person and while said support interfaces with said base,  
whereby the orientation of said body relative to said moving torso of said person is retained,  
5 facilitating freedom of torso motion while maintaining constancy of playing technique, independent of the position of said torso.

5. A stringed instrument, comprising:

10 (a) an elongated body having a first end,  
(b) a fingerboard bounded by a nut close to said first end and a bridge, said fingerboard further having a longitudinal axis, and  
(c) one or more strings suspended over said fingerboard between said nut and said bridge, the distance between said nut and said bridge greater than that of a viola and less than that of a  
15 cello,  
whereby said instrument can be played having said axis positioned on a person's anatomical median plane, thus enabling more ergonomic posture as well as a more ergonomic playing technique, and  
whereby said nut can be positioned on or close to said person's chest thus creating a more  
20 ergonomic left hand position, and  
whereby the position of said bridge enables ergonomic bow arm operations.

6. A stringed instrument with non-traditional nut, comprising:

25 (a) a fingerboard having a longitudinal axis, and  
(b) a nut positioned non-perpendicular to said axis and aligned with the orientation of a player's fingering hand while said hand is ergonomically approaching said nut,  
whereby said nut creates a more ergonomic fingerboard topology when said hand approaches  
said nut.

7. A stringed instrument with non-traditional bridge, comprising:

(a) a fingerboard having a longitudinal axis, and

5 (b) a bridge positioned non-perpendicular to said axis and aligned with the orientation of a player's fingering hand while said hand is ergonomically approaching said bridge, whereby said bridge creates a more ergonomic fingerboard topology when said hand approaches said bridge, and

whereby said bridge substantially aligns known points of contact, thus simplifying the

10 bowing technique of said instrument.

8. A stringed instrument with modular fingerboard, comprising:

(a) an elongated body,

15 (b) a fingerboard, and

(c) means for temporarily attaching both said body and said fingerboard as modules,

whereby said fingerboard can easily be attached to and separated from said body, thus

simplifying the assembly process and enabling convenient interchange of either said body or said  
fingerboard.

20

8.1. The stringed instrument of claim 8 wherein said means is achieved magnetically.

9. A stringed instrument with geared tuning system, comprising:

25 (a) a body,

(b) a peg for tuning a string,

(c) a wheel having an outer rim, said outer rim having means for providing friction,

(d) a gear having a ratio sufficient to enable tuning of said string by sliding a finger tangentially along said outer rim,

whereby pitch perception, being linear, is translated into an analogous linear finger movement, resulting in more intuitive tuning, and

whereby said linear finger movement provides an ergonomic alternative to traditional tuning movements.

5

9.1. The stringed instrument of claim 9 having a visual guide indicating the relationship between sliding direction and pitch direction,

whereby said visual guide clarifies and simplifies the tuning process.